Monthly Labor Review

BLS

December 2019

QCT Post Maintenance Test December 2019

QCT Post Maintenance Testing. Today is Decemer 18, 2019. Although economic activity in the U.S. economy has grown, be it slowly, since the summer of 2009, the unemployment rate has remained stubbornly high. This continued high level of unemployment is especially puzzling in light of the fact that, during the same period, U.S. employers have started to post substantially more vacancies.

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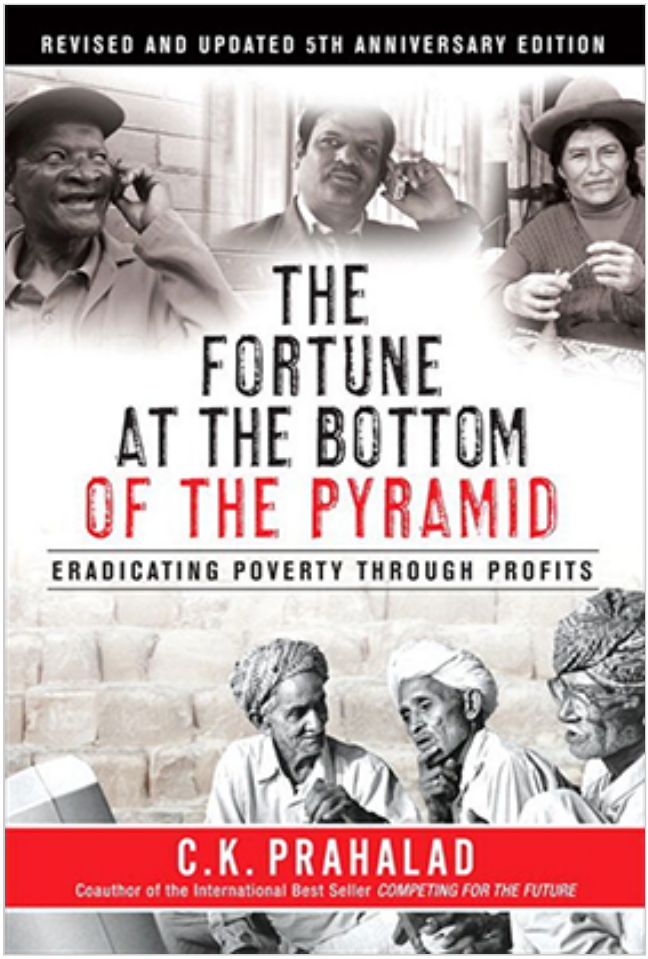
[i]Historically, there has been a tight negative relationship between the unemployment rate and the job openings rate. This relationship is known as the Beveridge curve. However, since the summer of 2009, this relationship seems to have broken down. In April 2011 the unemployment rate was 2.0 percentage points above its level implied by the Beveridge curve.



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QCT Tester

In this study we decompose the gap between the actual unemployment rate and that implied by the Beveridge curve into different parts using data from the Job Openings and Labor Turnover Survey (JOLTS).

[ii]The Beveridge curve can be interpreted as the job openings rate at which the current unemployment rate would be in its flow steady state. This steady state of the unemployment rate is that for which, at the current rates at which workers move between employment, unemployment, and non-participation, the unemployment rate would not change. In order to implement our decomposition, we construct the Beveridge curve by solving a fitted flow-steady-state equation using data on job openings, hires, layoffs and quits from JOLTS as well as data on entry and exit from the labor force from the CPS.

We further decompose the Beveridge curve gap to consider which industries account for the unexplained decline in the vacancy yield, as well as for the behavior of the quit and layoff rates. The result of this industry decomposition is that the shortfall in the vacancy yield is widespread across all industries. The vacancy yield deficit is particularly pronounced in construction, manufacturing, trade and transportation, leisure and hospitality, as well as in the industries not classified in JOLTS. From February 2011 through April 2011, the difference between the observed and predicted hires per vacancy in construction alone accounted for more than 1 percentage point of the 2.1 percent by which the actual unemployment rate exceeded that implied by the Beveridge curve.

We then use the estimated flow-steady-state equation to derive an approximate additive decomposition of deviations of the unemployment rate from the Beveridge curve into parts due to hires per vacancy, layoffs, quits, as well as labor force entry and exit. We find that the current Beveridge curve gap is almost fully attributable to an unexplained shortfall in the vacancy yield, i.e. the number of hires per vacancy, while a lower than expected quits rate reduces the gap.

Derivation of steady-state condition for the unemployment rate:

Because the labor force in month t, denoted by LF_t, equals the sum of the number of employed, E_t, and the number of unemployed, U_t, the change in the number of unemployed persons can be written as the change in the labor force minus the change in the number of employed persons. That is

$$U_t - U_{t-1} = \Delta U_t = \Delta LF_t - \Delta E_t. \quad (1)$$

Normalizing both sides of this expression by the labor force and using the fact that the unemployment rate, u_t, is the ratio of the number of unemployed persons and the size of the labor force, we can write

$$\frac{LF_t}{LF_{t-1}} u_t - u_{t-1} = \frac{\Delta LF_t}{LF_{t-1}} - \frac{E_{t-1}}{LF_{t-1}} \frac{\Delta E_t}{E_{t-1}}. \quad (2)$$

Hence, for the change in the unemployment rate to be zero, that is for unemployment to be in steady state, it must be the case that $g_t^{(lf)} = g_t^{(e)}$. Thus, the unemployment rate is in steady state whenever the growth rate of the labor force equals the growth rate of employment.

Of course, our decomposition is merely an accounting exercise and does not directly provide any explanations for the deviations of the flow rates from their predicted levels. We discuss some potential explanations as well as how the shift in the Beveridge curve may translate into a higher natural rate of unemployment in the final part of this article.

Approach

The approach in the current study builds on this concept of "bridge jobs", especially the findings that

- the majority of these bridge jobs are not in the same industry or occupation as the career job (Ruhm 1990), leading one to surmise that there is little transfer of skill or human capital from the career job to bridge job;
- the characteristics most highly correlated with the transition to bridge jobs are those associated with low-wage workers (Welch and Peracchi 1994), which again suggests lower levels of skill or human capital;
- the proportion of workers transitioning to bridge jobs declined significantly between 1969 and 1989 – a period when retirement rates were rising and labor force participation rates were falling, suggesting that access to bridge jobs may have declined during this period;
- the patterns of transitions among older workers paralleled that among younger workers in the 1970s and 1980s (Welch and Peracchi 1994).

These findings lead to the hypothesis that there may be a high level of competition and substitutability between older and younger workers for the types of part-time jobs typical of "bridge jobs", and that some common factor affected both older and younger workers in an increasing pattern during the 1970s and 1980s, which then attenuated in the 1990s and 2000s.

The "culprit" identified in this study – the common factor affecting both younger and older workers – is the post WWII baby boom. Their large relative cohort size – typified in a lagged Total Fertility Rate (TFR) – affected relative wages, unemployment, and the proportion of younger workers in part-time and/or part-year jobs, due to overcrowding in the cohort (demonstrated for young men by Macunovich 1999, 2002). The relative cohort size measure used here for older women is consequently the ratio of 25-34 year old women working part-time and/or part-year, to the number of women aged 55-69, and it is instrumented (given the possibility of endogeneity in the contemporaneous relative cohort size variable) using a 30-year lag of the Total Fertility Rate.

Exhibit Title

Table 1

WE FURTHER DECOMPOSE THE BEVERIDGE CURVE GAP TO CONSIDER WHICH INDUSTRIES ACCOUNT FOR THE UNEXPLAINED DECLINE IN THE VACANCY YIELD, AS WELL AS FOR THE BEHAVIOR OF THE QUIT AND LAYOFF RATES. THE RESULT OF THIS INDUSTRY DECOMPOSITION IS THAT THE SHORTFALL IN THE VACANCY YIELD IS WIDESPREAD ACROSS ALL INDUSTRIES. THE VACANCY YIELD DEFICIT IS PARTICULARLY PRONOUNCED IN CONSTRUCTION, MANUFACTURING, TRADE AND TRANSPORTATION, LEISURE AND HOSPITALITY, AS WELL AS IN THE INDUSTRIES NOT CLASSIFIED IN JOLTS. FROM FEBRUARY 2011 THROUGH APRIL 2011, THE DIFFERENCE BETWEEN THE OBSERVED AND PREDICTED HIRES PER VACANCY IN CONSTRUCTION ALONE ACCOUNTED FOR MORE THAN 1 PERCENTAGE POINT OF THE 2.1 PERCENT BY WHICH THE ACTUAL UNEMPLOYMENT RATE EXCEEDED THAT IMPLIED BY THE BEVERIDGE CURVE.

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Tables

Table 1. Employee-only labor share, nonfarm business subsectors, 1997 to 2014

Sector	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change, 1997 to 2014
Mining	0.37	0.44	0.41	0.33	0.31	0.31	0.26	0.25	0.21	0.21	0.20	0.18	0.22	0.21	0.20	0.22	0.21	0.22	-0.15
Utilities	.24	.26	.26	.28	.29	.30	.28	.27	.28	.26	.27	.28	.27	.25	.26	.27	.27	.26	.02
Construction	.67	.66	.66	.67	.67	.66	.64	.61	.59	.60	.62	.66	.64	.64	.64	.63	.63	.64	-.04
Durable goods	.62	.64	.66	.66	.70	.66	.64	.63	.62	.61	.61	.62	.62	.57	.58	.57	.57	.57	-.06
Nondurable goods	.49	.49	.48	.48	.46	.46	.45	.42	.41	.39	.38	.39	.35	.34	.34	.34	.34	.34	-.15
Wholesale trade	.50	.51	.52	.52	.53	.53	.52	.51	.50	.50	.50	.50	.49	.47	.48	.48	.47	.47	-.03
Retail trade	.58	.57	.58	.58	.58	.58	.57	.57	.56	.56	.58	.58	.56	.55	.56	.55	.55	.55	-.03
Transportation and warehousing	.65	.65	.66	.67	.68	.68	.65	.63	.62	.59	.62	.60	.61	.58	.58	.59	.58	.58	-.07
Information	.43	.44	.45	.52	.49	.42	.41	.38	.38	.38	.37	.35	.36	.34	.36	.37	.36	.37	-.06
Finance, insurance, real estate, rental and leasing	.23	.24	.24	.25	.24	.24	.23	.24	.24	.25	.25	.26	.23	.23	.23	.23	.23	.23	.00
Educational services, health care, and social assistance	.41	.40	.39	.38	.34	.34	.36	.39	.38	.38	.39	.39	.38	.38	.40	.42	.41	.42	.01
Professional and business services	.70	.72	.72	.75	.73	.71	.70	.70	.70	.71	.71	.70	.70	.70	.71	.72	.73	.74	.04
Arts, entertainment, recreation, accommodation, and food services	.56	.58	.58	.57	.59	.58	.58	.58	.58	.57	.58	.59	.58	.58	.58	.59	.58	.59	.03
Other services (except government)	.39	.39	.38	.38	.41	.39	.44	.43	.41	.39	.42	.43	.44	.40	.44	.42	.44	.44	.05

Source: U.S. Bureau of Labor Statistics.

SUGGESTED CITATION

Thao Do, "QCT Post Maintenance Test December 2019," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, December 2019, https://doi.org/10.21916/Art101.

NOTES

i This is the first one

ii This is the second one

RELATED CONTENT